

**AMENDMENTS TO THE CLAIMS**

**Claim 1 (currently amended):** An immunogenic complex comprising:  
gp120 covalently bonded to a fragment of CD4 or an equivalent thereof;  
wherein a fragment of CD4 includes either the first domain of CD4, the second domain of  
CD4, both the first and second domains of CD4, or a combination of the first or  
second domain of CD4 and the third or fourth domain of CD4; and  
wherein an equivalent of a fragment of CD4 is any molecule that mimics the  
conformation of any fragment of CD4 and which can bind to gp120.

**Claim 2 (original):** The immunogenic complex of claim 1 wherein said fragment of CD4  
comprises the first and second domains of CD4.

**Claim 3 (original):** The immunogenic complex of claim 1 wherein cryptic epitopes are  
revealed.

**Claim 4 (original):** The immunogenic complex of claim 1 wherein said gp120 is covalently  
cross-linked to said fragment of CD4.

**Claim 5 (original):** A composition comprising the immunogenic complex of claim 1.

**Claim 6 (original):** The composition of Claim 5 further comprising an adjuvant composed of  
aluminum phosphate gel.

**Claim 7 (original):** A composition comprising the immunogenic complex of Claim 1 and a  
pharmaceutically acceptable carrier.

**Claim 8 (withdrawn):** An antibody reactive with the immunogenic complex of Claim 1.

**Claim 9 (withdrawn):** The antibody of Claim 8, which is a monoclonal antibody.

**Claim 10 (withdrawn):** An immortalized cell line that produces an antibody as recited in Claim 9.

**Claim 11 (withdrawn):** A method of raising neutralizing antibodies against HIV, comprising administering to a subject an immunogenically effective amount of a complex of gp120 covalently bonded to a fragment of CD4 or an equivalent thereof in a pharmaceutically acceptable carrier.

**Claim 12 (withdrawn):** The method of Claim 11 wherein the fragment of CD4 comprises the first and second domains of CD4.

**Claim 13 (withdrawn):** A method for the detection of HIV antigen in a test fluid, comprising contacting the test fluid with an antibody raised against an immunogenic complex of gp120 covalently bonded to a fragment of CD4 or an equivalent thereof, and detecting the presence of immune complexes formed between antigen in the test fluid and said antibody.

**Claim 14 (withdrawn):** A test kit for conducting the method of Claim 13, comprising said antibody that is bound to a solid substrate or labelled and instructions for performing the detection method.

**Claim 15 (currently amended):** A ~~vaccine~~ composition for use in immunotherapy comprising:

an immunogenically effective amount of a complex of gp120 covalently bonded to a fragment of CD4 or an equivalent thereof in a pharmaceutically acceptable medium;  
wherein a fragment of CD4 includes either the first domain of CD4, the second domain of CD4, both the first and second domains of CD4, or a combination of the first or second domain of CD4 and the third or fourth domain of CD4; and  
wherein an equivalent of a fragment of CD4 is any molecule that mimics the conformation of any fragment of CD4 and which can bind to gp120.

**Claim 16 (withdrawn):** An immunogenic complex comprising gp120 covalently bonded to a CD4 equivalent molecule.

**Claim 17 (withdrawn):** The immunogenic complex of Claim 16 wherein cryptic epitopes are revealed.

**Claim 18 (withdrawn):** The immunogenic complex of Claim 16 wherein said CD4 equivalent molecule is a scorpion toxin-based CD4 mimetic miniprotein.

**Claim 19 (withdrawn):** The immunogenic complex of Claim 16 wherein said gp120 is covalently cross-linked to said CD4 equivalent molecule.

**Claim 20 (withdrawn):** A method of raising neutralizing antibodies against HIV, comprising administering to a subject an immunogenically effective amount of a complex of gp120 covalently bonded to a CD4 equivalent molecule in a pharmaceutically acceptable carrier.

**Claim 21 (previously presented):** The composition of claim 7;  
wherein the composition is a vaccine.